

CASIO

PHONEMATE

EASY TO USE OWNER'S GUIDE

TC-520 ANSWERING MACHINE WITH CORDLESS TELEPHONE



Technical Specifications

FCC Registration No:
Frequency Control: Crystal
Operation Mode: FM
Ringer Equivalence: 0.002B
Jack: RJ11

Transmit Frequency
Handset: 48.7 to 49.5, 49.6 to 49.9 MHz
Base Unit: 43.7 to 44.4, 46.6 to 46.9 MHz

Receive Frequency
Handset: 43.7 to 44.4, 46.6 to 46.9 MHz
Base Unit: 48.7 to 49.5, 49.6 to 49.9 MHz

Power Source
Handset: Replaceable NiCad Batteries
Base Unit: AC9V 600mA

Battery Life
Standby: 7 days
Talk: 6 hours
Recharging Time: 12-15 hours (with power off)

The TC-520 is hearing aid compatible.

Design and specifications subject to change
without notice.

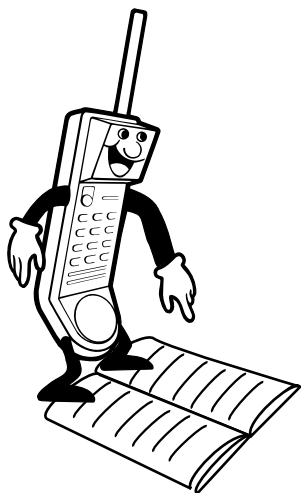
U.S. Pats.

4,120,583	4,686,622
4,121,284	4,825,364
4,371,923	4,829,419
4,396,976	4,896,260
4,531,182	4,942,516

CASIO PHONEMATE, INC.
20665 Manhattan Place
Torrance CA 90501

M2S1 4/96
Printed in Malaysia

TABLE OF CONTENTS



Important Safety Instructions	2
Important Cordless Telephone Information	3

INITIAL SETUP

Installation	4
Record an Outgoing Message	6
Check your Outgoing Message	6
Set Time & Day Stamp	7
Talking Clock	7
Operating Information	8
Switch Settings	9
Tone/Pulse	9
Power Saver Ringer On-Off	9
Base Ringer On-Off	9
Programmable Ring Select	9

MESSAGES - from Base Unit

Call Screening	10
Message Indicator	10
Play Messages	11
Rewind Messages	11
Fast Forward Messages	11
Replay Messages	11
Pause Message Playback	12
Automatic Erase (Tape Reset)	12
Save Messages	12
Erase Messages	12
Answering a Call During Message Playback ..	13
Memo Record	13
Paging the Handset from the Base Unit	14

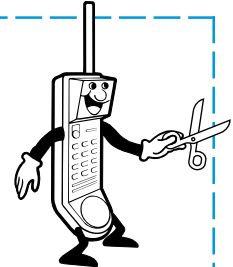
HANDSET OPERATION

Charging the Batteries	14
Low Battery Indicator	14
Handset Message Waiting Indicator	14
Handset Volume Control	15

ACCESSORIES

To order accessories for your TC-520 answering machine, simply cut out this order form, fill in the appropriate information and send it with payment (check, money order or credit card information) to:

CASIO PHONEMATE Parts Department
8805 Kelso Drive
Baltimore, MD 21221
or Call: 1-800-322-9995



Description	Part No.	Price	Qty.	Total
Lightning Arrestor - Helps protect telephone answering machines from damage caused by lightning strikes to the telephone line. <i>Recommended for areas prone to electrical storms.</i>	2700140	\$19.95		
30 Minute Microcassette - For recording outgoing and incoming messages.	2601008	\$5.95		
Rechargeable Battery Pack - For Model TC-520.	3201010	\$15.00		
AC Adapter - For Model TC-520.	1601061	\$13.50		
Touchtone Dialer - Activates the beeperless remote operation in areas where true touchtone is not available or from cellular phones.	2001018	\$19.95		
Modular Duplex T-Adapter - Converts a single modular telephone jack to a double jack.	2700156	\$5.95		
Modular Two Line T-Adapter - Splits one RJ14 two line jack into two RJ11 single line jacks.	2700135	\$5.95		
A+A1 Light Control - When using this answering machine with a business phone system, this accessory enables the in-use indicator at a receptionist's console to light when the phone is off-hook.	2701180	\$6.95		

VISA and Master Card orders ONLY call toll free 1-800-322-9995 or use this form to order. CASIO PHONEMATE, Parts Dept., 8805 Kelso Drive, Baltimore, MD 21221

Enclosed is my check/money order for the total amount.

Please charge my credit card. VISA MasterCard

Card No.

Expiration Date

Name _____

Street Address _____

City _____ State _____ Zip Code _____

Signature _____ Telephone _____

Subtotal
CA & MD residents
add applicable
sales tax
All orders add
shipping and
handling
\$3.50
Total

Please fill in the quantity and total price of the items that you are requesting. Figure the total and send a check or money order for the proper amount. We do not accept C.O.D. orders. Allow 15 working days for delivery. Prices subject to change without notice. Returns subject to 20% restocking charge upon approval.

FCC REQUIREMENTS USER INSTRUCTIONS

1. This equipment complies with Part 68 of the FCC rules. On the bottom of this equipment is a label that contains, among other information, the FCC registration number and Ringer Equivalence Number (REN) for this equipment. If requested, provide this information to your telephone company.
2. The REN is useful to determine the quantity of devices you may connect to your telephone line and still have all of those devices ring when your number is called. In most, but not all areas, the sum of the RENs of all devices should not exceed five (5.0). To be certain of the number of devices you may connect to your line, as determined by the REN, you should call your local telephone company to determine the maximum REN for your calling area.
3. If your answering machine causes harm to the telephone network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice isn't practical, you will be notified as soon as possible. You will be advised of your right to file a complaint with the FCC.
4. Your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper operation of your equipment. If they do, you will be given advance notice so as to give you an opportunity to maintain uninterrupted service.
5. If there is a problem with this unit, the telephone company may ask you to disconnect this equipment from the network until the problem has been corrected or you are sure that the equipment is not malfunctioning.
6. Repairs can only be made by the manufacturer or an authorized service agency. Unauthorized repairs void registration and warranty. Contact seller or manufacturer for details of permissible user-performed routine repairs, and where and how to have other than routine repairs made.
7. This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs. (Contact your state public utility commission or corporation commission for information.)

Jack: RJ11 Ringer Equivalence:
CASIO PHONEMATE, Inc. 20665 Manhattan Place, Torrance, CA 90501

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- λ Reorient or relocate the receiving antenna.
- λ Increase the separation between the equipment and receiver.
- λ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- λ Consult the dealer or an experienced radio/TV technician for help.

Any changes made by the user not approved by CASIO PHONEMATE can void the user's authority to operate the equipment.

You hear continuous short beeps instead of a dial tone when using the cordless handset.

The beep tones are a warning alarm to let you know:

1. That the handset is out of communication range with the base unit. Move the handset closer to your base unit.
2. That the base unit had some problem like a power failure. Return the handset to the base unit for 5 seconds and make sure all cords are connected correctly.

Interference Noise is heard.

1. The handset is too far from the base unit.
2. The cordless handset is picking up interference from one of several sources: electrical appliances such as radio, TV, fluorescent lights, etc. Move the base unit to reduce interference.
3. Press CHANNEL to select another channel.

No Page Tone is heard at the Handset.

1. Check the AC ADAPTER and telephone cord connection.
2. You may have had a power failure. Return the handset to the base unit for 5 seconds to reset the Digital Security Code.

A beep is heard each time the handset is returned to the base unit.

This is normal operation. The handset is updating the security code.

After several attempts the TC-520 will not operate properly.

Unplug the AC ADAPTER PLUG from the back of the TC-520 for 10 seconds. Remove the batteries from the handset. Plug the AC Adapter back into the base station and re-insert the batteries in the handset. Return the handset to the base unit for 10 seconds.

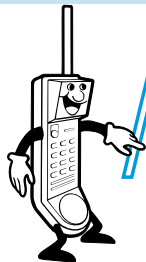
If these actions do not remedy the problem, call the CASIO PHONEMATE Helpline. The helpline staff can often resolve problems or recommend service when needed. Unless you live close to a CASIO PHONEMATE Service Center, you may need to mail your machine to CASIO PHONEMATE for repair. You should:

1. Package the unit in its original box or a comparable package.
2. Include a clear and specific explanation of the problem.
3. Include your name, address, and phone number.
4. Provide a legible photocopy of the dated store receipt for warranty purposes.

**FACTORY
SERVICE
CENTERS**

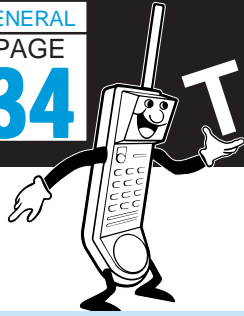
20665 Manhattan Place
Torrance, CA 90501
(310) 328-6453

8805 Kelso Drive
Baltimore, MD 21221
(410) 391-0974



EXTRA HELP

Should you have additional questions, please call CASIO PHONEMATE's Help Line at (310) 320-9810 (West Coast) or (410) 686-2885 (East Coast) for assistance.



ROUBLESHOOTING

ANSWERING MACHINE

Messages were not erased after playback.

1. Press ERASE during message playback or within 7 seconds after the last message has played.
2. Do not press SAVE.
3. After a power failure, the entire tape may play. See page 30 for power failure recovery.

When calling in, the beep tone after your outgoing message seems too long.

Each recorded message will lengthen the beep tone while the tape repositions itself to accept the next message. This is normal operation for single-cassette answering machines. Play and erase messages frequently to keep this delay short.

There is an operator recording or a dial tone between messages.

The caller hung up without leaving a message.

No sound from the speaker.

Check the VOLUME CONTROL. It may have been turned down.

You are unable to retrieve your messages using a touchtone phone.

See "Remote Operation," page 27-29.

The sound is distorted during playback or the TC-520 automatically shuts off and begins beeping.

Check the tape. It may be damaged or worn. Also clean the tape head and capstan (See "Cleaning" page 31.)
If this does not remedy the problem, you may need to replace the tape.

The LINE IN-USE INDICATOR flashes rapidly.

Connect the telephone cord to the wall jack.

HANDSET

No Dial Tone is heard when calling out.

1. Was the battery pack charged for at least 12-15 hours? Is the LOW BATTERY INDICATOR flashing?
2. Check the AC adapter connection.
3. Check the telephone cord connection.
4. Check the connection of the battery pack. See page 32.

The handset does not ring.

1. Check the ringer switch and make sure it is not set to "POWER SAVER."
2. Check AC ADAPTER and telephone cord connection.
3. Was the battery pack charged for at least 12-15 hours? Is the LOW BATTERY INDICATOR on?

LIMITED WARRANTY

IMPORTANT!

SALES SLIP OR EVIDENCE OF PURCHASE DATE REQUIRED

This limited warranty gives you specific legal rights; you may also have other rights which vary from state to state.

The limited warranty is extended only to the original consumer of a CASIO PHONEMATE product and is valid only with respect to consumers within the United States of America and Canada. Subject to the following conditions, should this product prove defective by reason of improper workmanship of material:

During the period of one (1) year from the date of original purchase, CASIO PHONEMATE will repair or, at its option, replace the product without charge for parts or labor. If CASIO PHONEMATE elects to replace the product, such replacement may be accomplished with a factory-reconditioned unit.

This limited warranty does not apply: (a) to any product damaged by accident, misuse, improper line voltage, lightning, fire, water, or other acts of nature, (b) if the product is altered or repaired by anyone other than CASIO PHONEMATE, INC. or one of its authorized warranty stations or if the FCC-approved connector plugs are removed. This limited warranty does not cover tapes or broken or marred cabinets.

Except to the extent prohibited by applicable law, all implied warranties made by CASIO PHONEMATE in connection with this product are limited in duration to a period of one (1) year from the date of original purchase, and no warranties, whether expressed or implied, shall apply to this product after said period.

Should this product prove defective in workmanship or material, the consumer's sole remedies shall be such repair or replacement as is herein-above provided. Under no circumstances shall CASIO PHONEMATE be liable for any loss or damage, direct, consequential, or incidental arising out of the use of or inability to use this product.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusion may not apply to you.

In order to obtain warranty service, you must provide evidence of purchase date. For your convenience, keep the dealer's dated bill of sale or delivery ticket as evidence of the purchase date.

To obtain the name of the authorized CASIO PHONEMATE service facility,
call CASIO PHONEMATE 's HelpLine at
(410) 686-2885 or (310) 320-9810.

If you live in an area that is highly susceptible to electrical storms, you may want to purchase a Lightning Arrestor. The Lightning Arrestor attaches to your answering machine and if lightning causes a surge through your phone line, the arrestor will help suppress the surge of electricity which may cause damage to your unit.

To purchase your Lightning Arrestor, use the attached Accessory Order Form or call CASIO PHONEMATE 's Parts Department toll free: 1-800-322-9995.

**FACTORY
SERVICE
CENTERS**

20665 Manhattan Place
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(410) 391-0974

MICROCASSETTE & BATTERY INSTALLATION

REMOVING/REPLACING MICROCASSETTE

If it becomes necessary to remove or replace the microcassette be sure to play messages first.

1 Gently lift the tape out from the left side.

2 **INSTALL** a new microcassette.

3 Press **ON/OFF** to turn the machine on.

4 **RE-RECORD** your outgoing message (see page 6).

BATTERY INSTALLATION

**THIS UNIT IS SHIPPED WITH THE
HANDSET BATTERY PACK
INSTALLED.**

If it becomes necessary to replace the battery pack:

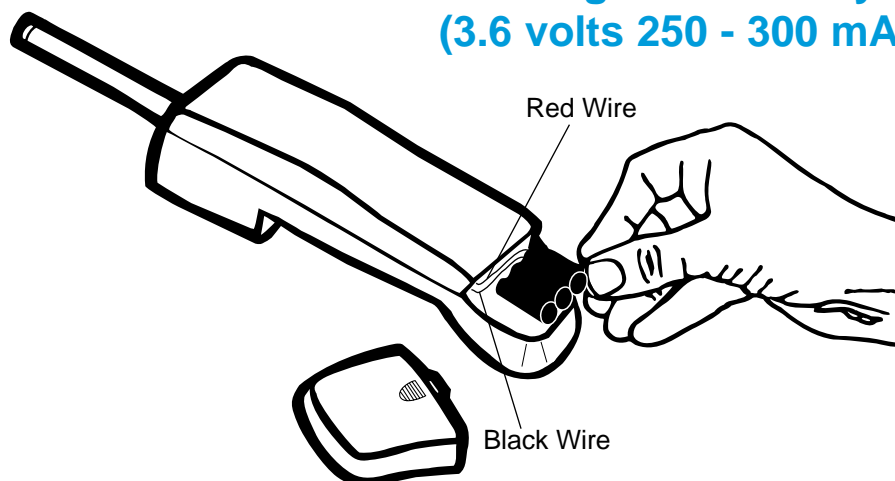
1 Press down on the battery compartment cover and slide it toward the bottom of the handset.

2 Install the new battery pack with the red wire on the right side of the black wire (see drawing.)

3 Replace the battery cover by sliding it up from the bottom.

4 Place the handset in the base unit and charge the battery pack for 12-15 hours.

**WARNING: Use only NiCad
Rechargeable Battery Pack
(3.6 volts 250 - 300 mAh.)**

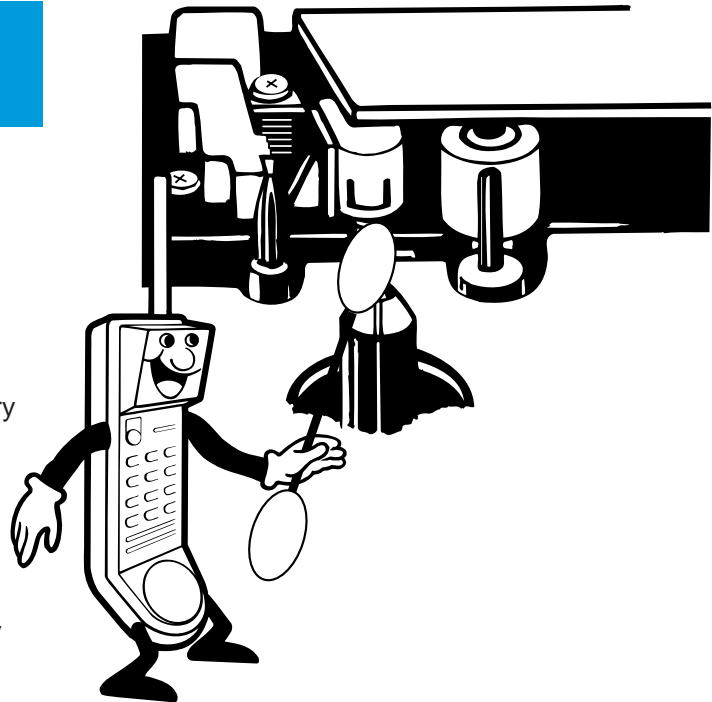


CLEANING

CLEANING THE BASE UNIT

CAUTION: Play messages before cleaning and then disconnect the TC-520 from the power outlet.

To assure high performance, periodically clean the tape heads and capstan whenever you notice an accumulation of dust and red-brown oxide particles. Use a cotton swab moistened with isopropyl alcohol. Be sure no alcohol touches rubber parts, as it tends to dry and eventually crack the rubber. Use a damp cloth or sponge to clean the cabinet. A mild soap, like dishwashing detergent, will help remove grease or oil. Do not spray cleaners directly onto the machine. Cleaners should only be used on the plastic surfaces. If they get into the mechanism or speaker, they may damage the machine.



CLEANING THE HANDSET

CAUTION: Disconnect the TC-520 from the power outlet before cleaning.

Clean the battery charging contacts on the base unit and the handset with a soft cloth once a month. Clean the antenna, and the plastic cabinet of the base unit and the handset, with a soft cloth only. Do not use excess water or cleaning liquid of any kind.

POWER FAILURE & TWO LINE INSTALLATION

POWER FAILURE RECOVERY

If the power failure exceeds 3 minutes, the **MESSAGE RECORD** and **SPEAKERPHONE INDICATORS** will flash rapidly at the base unit.

This indicates that you need to check your messages and reset the time/day and ring select settings.

Autodial memory is protected from a power failure for approximately 24 hours. After 24 hours it will be necessary to re-program the autodial numbers.

POWER FAILURE RECOVERY FROM THE BASE UNIT

- 1 Press **PLAY/PAUSE** to play any messages that were recorded.



- 2 Press **SAVE** to save your messages.

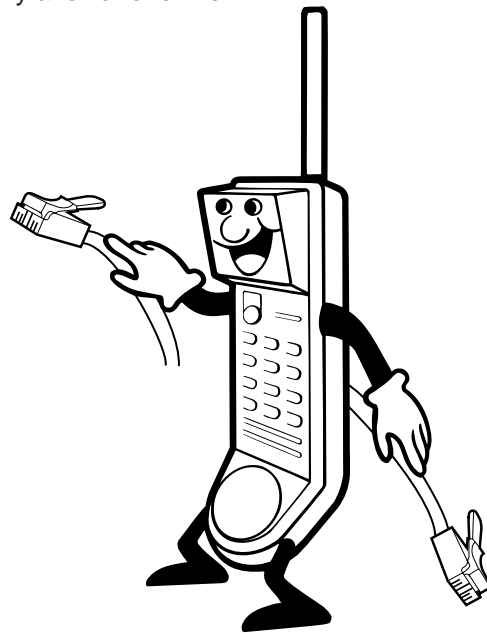


OR

- 2 If you do not wish to save messages, press **ON/OFF** twice to reset the unit. The **MESSAGE INDICATOR** will light.

TWO-LINE INSTALLATION

Two-line installations may require a 2-line T-adapter for the TC-520 to operate correctly. The T-adapter allows you to connect your machine to Line 1 or Line 2. The TC-520 will only answer one line.



MULTI-LINE INSTALLATION

Installations with more than two lines, such as business PBX or Key Systems, may require a separate RJ11 jack for answering machines. Please contact your telephone equipment provider for additional information.

REMOTE ROOM MONITOR

You can call the TC-520 and listen to the activity in your home or office.

- 1 Press **9** on a touchtone keypad. You will hear a beep. Listen to the activity in your home or office.



- 2 After 30 seconds you will hear:

Enter 9 to remote line.

- 3 Enter **9** again to use the remote room monitor for another 30 seconds.

OR

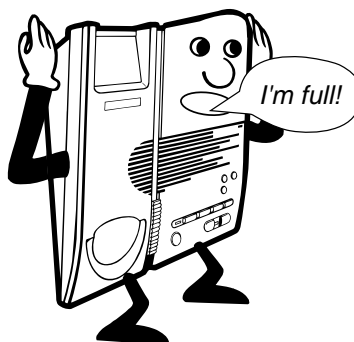
- 3 Select another option or hang up.

REMOTE TURN ON

If you leave your home or office without turning the TC-520 on, you can do so from any telephone.

- 1 Call and let your phone ring 15 times. The TC-520 will automatically answer and you will hear your outgoing message. Hang up or retrieve messages by entering your remote access number after the beep.

MESSAGE RETRIEVAL WHEN TAPE IS FULL



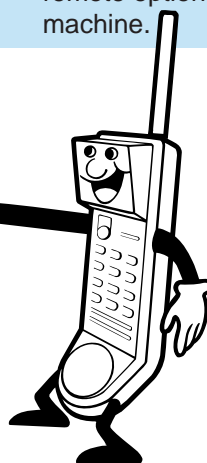
When the message tape is full, the TC-520 will no longer take messages. Callers trying to leave a message will hear a series of beeps. To retrieve messages when the tape is full:

- 1 Call and let the TC-520 answer. You will hear:

Message tape is full.

- 2 **ENTER** your **3-digit remote access number** during the series of beeps.

- 3 The tape rewinds and all messages on the tape are played. After the last message has played, choose other remote options or hang up to reset the machine.



REMOTE OPERATION

REMOTE VOICE MENU

After all messages play, the TC-520 lists the remote menu. You can select a remote option immediately after hearing the option, or hang up and messages will be erased.



AUTOMATIC ERASE (RESET)

- 1 Hang up after all messages play. The TC-520 will reset to record new messages. Once a new message has been recorded, all old messages will be lost.

REPLAY MESSAGES

- 1 Press **1** on a touchtone keypad. You will hear:



I will replay messages.

- 2 The TC-520 will replay your messages. Select another option or hang up.

ERASE MESSAGES

- 1 Press **3** on the keypad. You will hear:

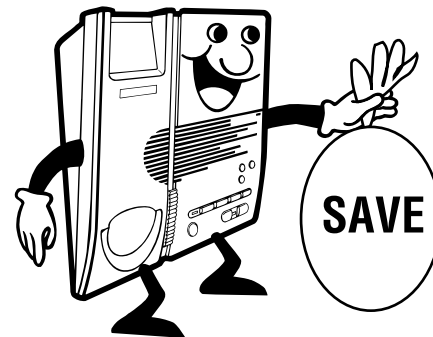


I will erase messages.

NOTE: If the unit does not respond when you enter your access number, wait three seconds and re-enter the number during the short pause between the beeps.

- 2 Select another option or hang up.

SAVE MESSAGES



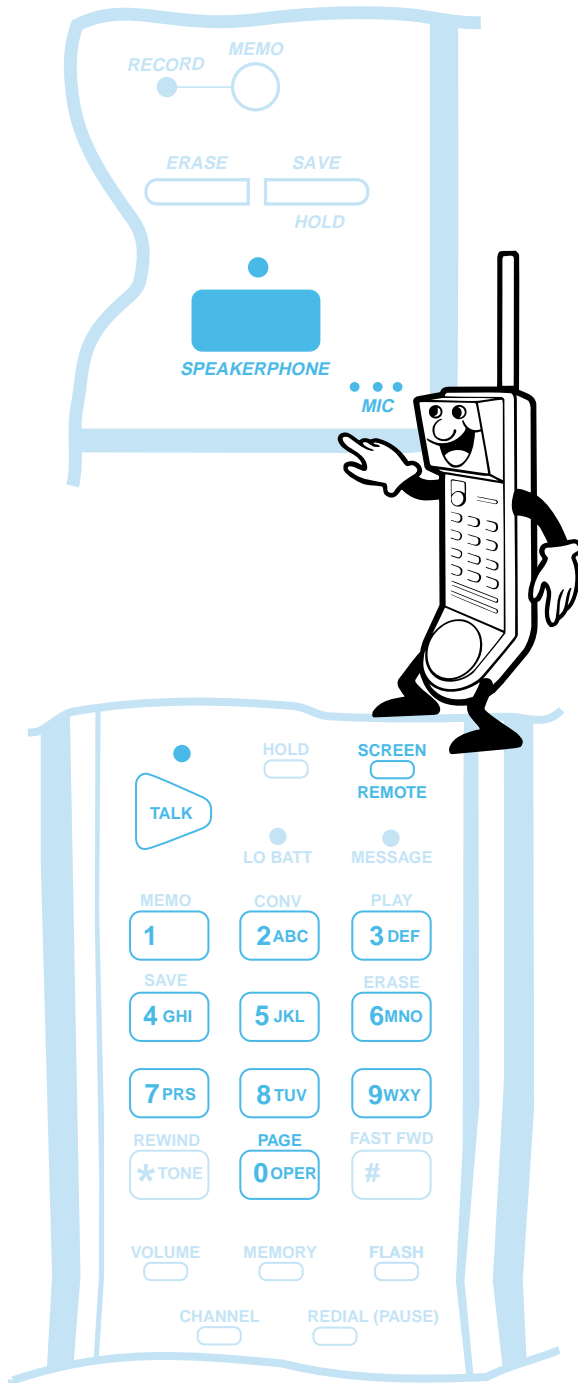
- 1 Press **7** on a touchtone keypad. You will hear:



I will save messages.

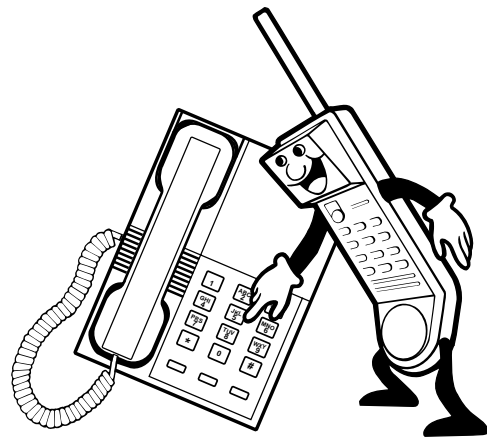
- 2 Select another option or hang up.

REMOTE OPERATION



You can use Remote Operation from most touchtone or cellular phones to retrieve, replay, erase and save messages. The 3-digit Remote Access Number is printed on the inside of the TC-520 cassette lid.

If you call from a rotary or pulse telephone, use CASIO PHONEMATE's "Touchtone Dialer." Use the accessory order form on page 37 to order one.



RETRIEVE MESSAGES

- 1** Call the answering machine and listen to your outgoing message.
- 2** **ENTER** your 3-digit remote access number after the beep.
- 3** The tape rewinds and your messages will be played.
- 4** After all messages play, you will hear the voice menu. Select another option or hang up.

SPEAKERPHONE & PAGING

The speakerphone allows you to conduct phone conversations without using the handset.

TO ANSWER AN INCOMING CALL

- 1 Press **SPEAKERPHONE**.



- 2 Adjust the **VOLUME CONTROL**.

- 3 Speak into the microphone. You will hear the outside party through the speaker. If you wish to speak through the cordless handset, you may pick it up and press **TALK**.

- 4 Press **SPEAKERPHONE** again to hang up or hang up the cordless handset if you have been using it.

TO SWITCH FROM HANDSET TO SPEAKERPHONE

- 1 Pick up the handset.

- 2 Press **TALK** and enter the telephone number on the keypad.



- 3 Press **HOLD** on the handset.



- 4 Press **SPEAKERPHONE**. The handset will automatically turn off.



- 5 Adjust the **VOLUME CONTROL**. Speak into the microphone. You will hear the outside party through the speaker.

- 6 Press **SPEAKERPHONE** again to hang up.

PAGING THE BASE FROM THE HANDSET

- 1 Press **SCREEN/REMOTE**.



- 2 Press **PAGE (0)** on the cordless handset. You will hear two beeps from the base unit.



- 3 To cancel the page, press **SCREEN/REMOTE** or **PAGE**.

PROGRAMMABLE PAUSE

Pause is convenient for use on a business telephone system (i.e.: PBX) when an 8 or 9 must be dialed to reach an outside phone line. This feature can also be used for a long distance service where you have to wait for a second dial tone before you continue dialing.

Each time **PAUSE** is pressed it will provide a 2-second pause when dialing. If an 8-second pause is required, press **PAUSE** four times when storing autodial numbers. Each pause counts as one digit when storing autodial numbers.

EXAMPLE #1

To store an outside number with a business phone system, for example 9 (pause) 555-1234.

- 1 Press **MEMORY**.



- 2 Press **9** to get an outside line.



- 3 Press **REDIAL (PAUSE)**.



- 4 Enter the telephone number. For example, 555-1234.

- 5 Press **MEMORY**.

- 6 Press an autodial location (0-9 on the keypad).

- 7 Repeat steps 1-6 to continue or press **MEMORY** to exit the programming mode.

EXAMPLE #2

To store a telephone number with an access number, for example 555-1234 (pause for dial tone) 56789.

- 1 Press **MEMORY**.



- 2 Enter the telephone number, for example 555-1234.

- 3 Press **REDIAL (PAUSE)**. If a longer pause is necessary, press **REDIAL (PAUSE)** again.



- 4 Enter the access number 56789, for example.

- 5 Press **MEMORY**.

- 6 Press an autodial location (0-9 on the keypad).

- 7 Repeat steps 2-6 to continue or press **MEMORY** to exit the programming mode.

AUTODIAL (CONTINUED)

TO CHECK STORED NUMBERS

1 Press **SCREEN/REMOTE**.



2 Press **MEMORY**.



3 Press an **AUTODIAL LOCATION**.
A synthesized voice will confirm the stored number.

USING AUTODIAL

To place a call using autodial:

1 Press **TALK**.



2 Press **MEMORY**.



3 Press the autodial station number you wish to dial (0-9 on the keypad.) The TC-520 will dial your number automatically. NOTE: To redial the same number again, press **TALK** and then press **REDIAL**.

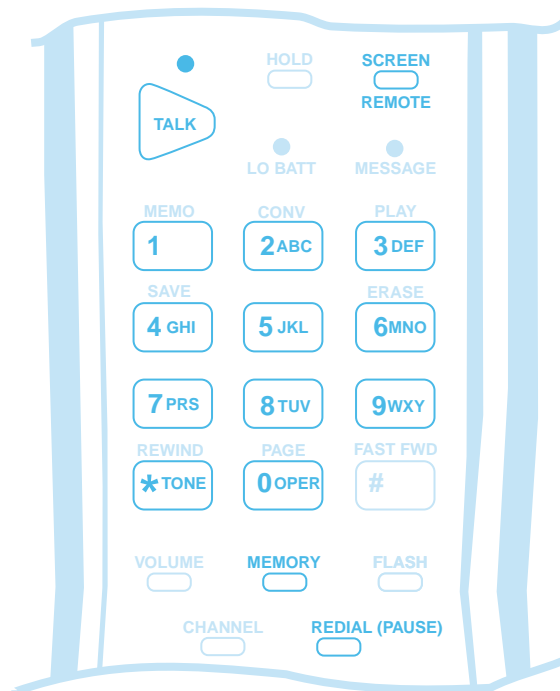
ERASE AUTODIAL NUMBERS

To erase autodial numbers, store a new number in the autodial location you wish to erase (see page 23.) For example, you may store a one digit number to erase an old phone number.

TO PROGRAM TONE/PULSE IN AUTODIAL

Store frequently dialed mixed tone/pulse numbers in the autodial memory. Follow instructions on page 23 for storing autodial numbers.

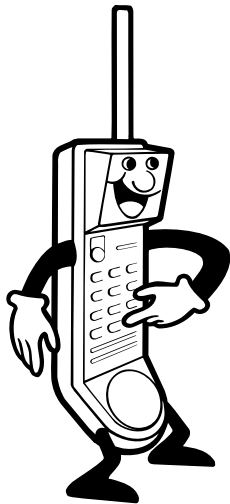
1 Press **TONE** (* on the keypad) to switch from pulse to tone.
Example: 555-1212 *3457
(pulse) (tone)



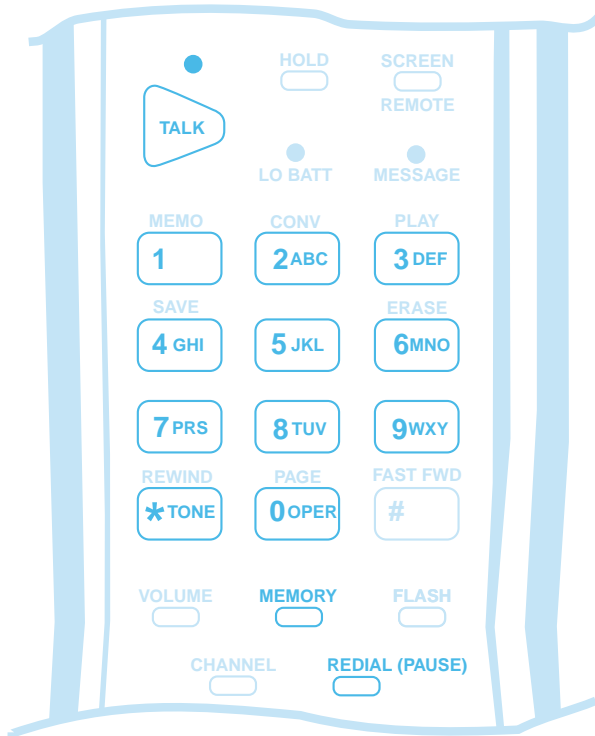
AUTODIAL

AUTODIAL MEMORY BACKUP

CASIO PHONEMATE's memory back up system in the base unit maintains autodial numbers for



up to 3 minutes with no batteries installed. If you want to relocate the base unit, unplug the AC Adapter from the wall outlet. If you unplug the AC Adapter Plug from the base unit, you will lose all autodial memory.



AUTODIAL WITH VOICE CHECK

You may store up to 10 of your most frequently dialed numbers in autodial memory. Autodial numbers can be up to 15 digits each. The base unit must be connected to the electrical wall outlet with the AC Adapter and the Talk Indicator must be off.

- 1 Press **MEMORY**. You will hear a confirmation tone.



- 2 Enter one of the telephone numbers you want to store in the autodial memory by dialing it on the keypad. You will hear a confirmation tone each time you press a button.



- 3 Press **MEMORY**.

- 4 Press a keypad number (0-9) as the autodial location for that number. A synthesized voice will confirm your stored number.



- 5 Continue steps 1-4 until you have entered all your autodial numbers.

- 6 The TC-520 will automatically exit the autodial program mode. NOTE: If you do not press a key, the unit will exit the programming mode 7 seconds after the last command was entered.

REDIAL, FLASH & MIXED DIALING

REDIAL

The TC-520 remembers the last number you dialed. The redial memory will hold up to 15 digits. Every time you dial a new telephone number, the redial memory is updated with that new number.

- 1 Press **TALK** and wait for a dial tone.



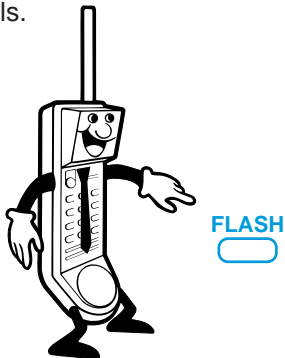
- 2 Press **REDIAL**.



FLASH

If you subscribe to a call waiting service and you receive another call while using the phone, press **FLASH** to answer the second call. Press **FLASH** again to return to the first call.

FLASH may also be used on a business phone system (CENTREX, PBX) for transferring calls.



PULSE/TONE MIXED DIALING

If you live in a pulse or rotary dialing area, you can use **TONE** to access a long distance service (i.e. Sprint or MCI), bank by phone, or any other service that requires touchtone dialing from your cordless handset. Press **TONE** (*) on the handset to change from pulse to tone mode temporarily when you are dialing.

- 1 Set the **TONE/PULSE SWITCH** at the base unit to Pulse.



TONE PULSE

- 2 Press **TALK** and wait for dial tone. Dial your local telephone number and wait for the line to connect. (You dialed your call in pulse mode.)



- 3 Press **TONE** (*) on the keypad.) NOTE: You do not have to change the **TONE/PULSE SWITCH** at the base unit.



- 4 Dial the tone numbers. NOTE: The "tone" mode can be canceled by pressing **TALK** or returning the handset to the base unit.

IF YOU DIALED A WRONG NUMBER

- 1 Press **TALK** twice (“off” and “on.”) Wait for dial tone and dial the correct number.

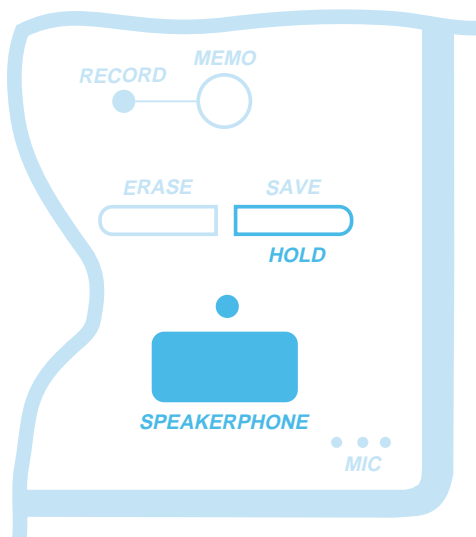


TO RECEIVE A CALL

- 1 When the phone rings, pick up the cordless handset and press **TALK** or press **SPEAKERPHONE**. Speak to the caller.



- 2 To hang up, press **TALK** on the handset or return the handset to the base unit.



HOLD

You may place a call on hold while using the speakerphone or cordless handset.

WHILE USING THE CORDLESS HANDSET

- 1 Press **HOLD** to place a call on hold. The **TALK INDICATOR** on the handset and **CHARGING LINE IN-USE INDICATOR** on the base unit will flash.
NOTE: You can place a call on hold for up to 5 minutes. Do not return the handset to the cradle because you will disconnect the caller.



- 2 To continue your phone conversation, press **TALK**, **HOLD**, or **SPEAKERPHONE** or pick up an extension phone connected to the same line.

WHILE USING THE SPEAKERPHONE

- 1 Press **HOLD/SAVE** on the base unit. The **SPEAKERPHONE INDICATOR** will flash. NOTE: You can place a call on hold for up to 5 minutes.

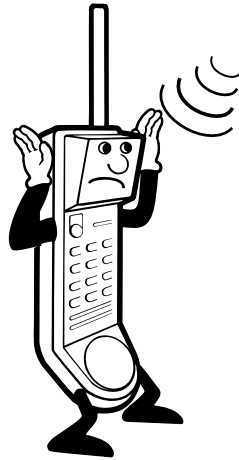


- 2 To continue your phone conversation, press **SPEAKERPHONE**, **TALK**, or **HOLD** or pick up an extension phone connected to the same line.

TELEPHONE OPERATION

ALARM

The TC-520 cordless handset operates like any other telephone handset. You can use it in the yard, at the pool, at the mailbox, or any place within the operating range of the base unit. If you move out of the base unit's operating range, you will hear a warning tone. Move closer to the base unit to deactivate the alarm. If you remain out of range for too long, the TC-520 will disconnect from the line.

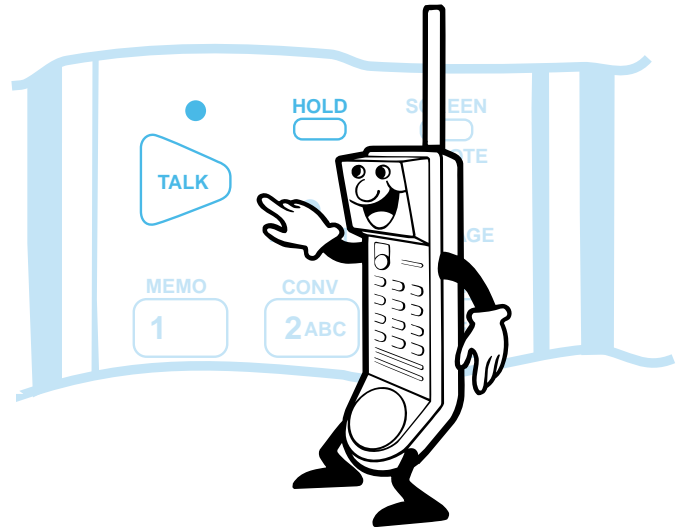


If the handset loses its security code you will also hear an alarm tone. To reset this security code place the handset in the base unit for a few seconds. Pick up the handset and try your call again.

Interference from other appliances may also cause the alarm to sound. To prevent interference, move the base unit to another location and fully extend the base unit antenna.

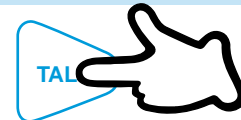
STANDBY MODE

When the handset is in the **TALK** mode and is returned to the base unit, it will automatically return to the "Standby" mode and disconnect the call. It is not necessary to press **TALK** to disconnect the call. In the "Standby Mode" the **INDICATORS** will not be lit.



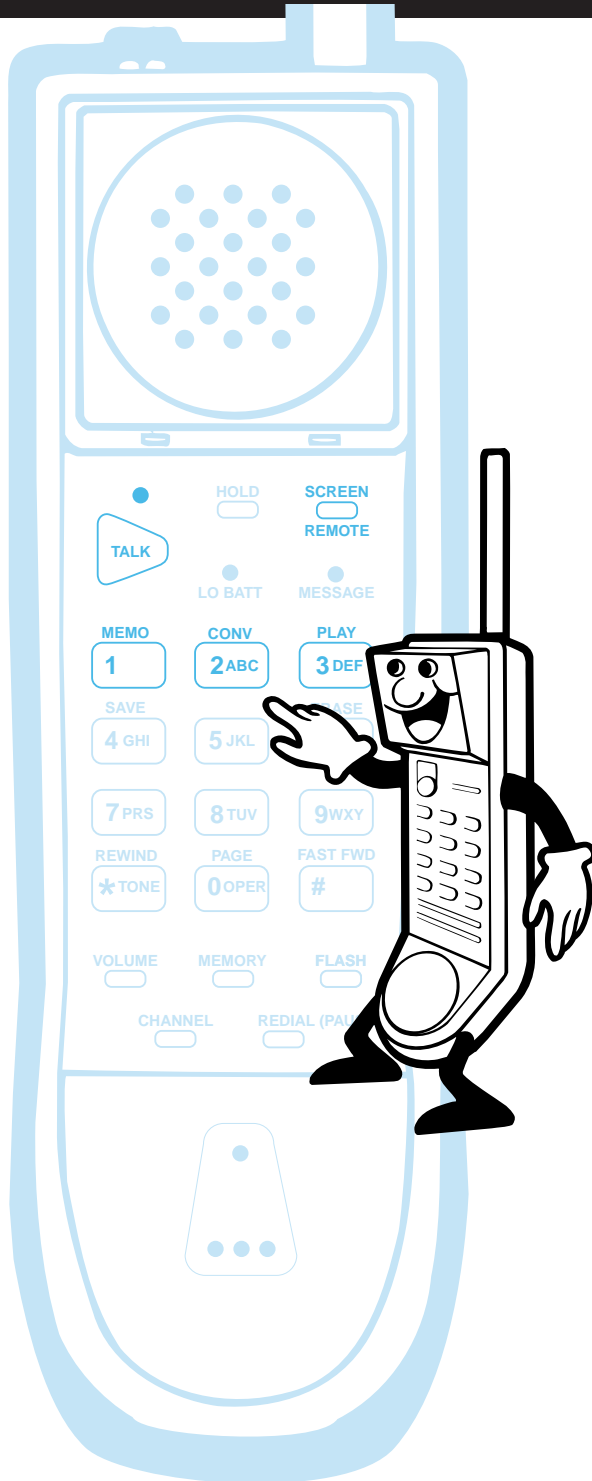
TO PLACE A CALL

- 1 Pick up the handset and press **TALK**.



- 2 Wait for dial tone and dial the phone number. NOTE: The **CHARGING/LINE IN-USE INDICATOR** on the base lights to show the handset is in use.

- 3 To hang up, press **TALK** or return the handset to the base unit. NOTE: When you return the handset to the base unit, you are hanging up the phone (Standby Mode.) The TC-520 is now ready to receive a call and the Charging/Line In-Use Indicator lights to show the battery is charging.



CONVERSATION RECORD

The TC-520 allows you to record important telephone conversations.

- 1 Press **SCREEN/REMOTE** during your phone conversation.

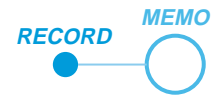
SCREEN
REMOTE



- 2 Press **CONV** (2 on the keypad.)



- 3 When the **RECORD INDICATOR** stops flashing, the TC-520 will begin recording.



- 4 Press **CONV** again to end the recording.

NOTE: In certain states, it is unlawful and may lead to criminal penalties to record any telephone conversation without prior consent of all parties.

MESSAGE PLAYBACK, MEMO

ANSWER A CALL DURING PLAYBACK



If a call comes in while you are playing your messages through the handset, the answering machine will not answer the call, but your phone will ring.

- 1 Press **TALK** to answer the incoming call.



- 2 To hang up and continue listening to your messages, press **TALK**.

- 3 Press **SCREEN/REMOTE**.



- 4 Press **PLAY** (3 on the keypad) to listen to messages.



RECORD A MEMO

You can record a memo up to five minutes in length. Recorded memos will be played along with the incoming messages in the order in which they were recorded.

- 1 Be sure the **TALK INDICATOR** is not lit. (The handset is in the Standby mode.)



- 2 Press **SCREEN/REMOTE**.



- 3 Press **MEMO** (1 on keypad.)



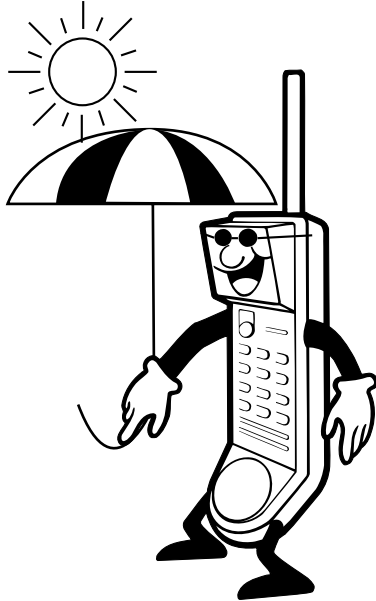
- 4 When the **RECORD INDICATOR** stops flashing and you hear:

Please record message.

- 5 Begin speaking into the handset.

- 6 Press **MEMO** to end the recording. You will hear a confirmation tone.

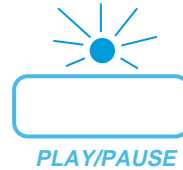
CALL SCREENING



CALL SCREENING

When the phone rings, the TC-520 will answer the call. You may use the handset to screen your phone calls.

- 1 Be sure the **MESSAGE INDICATOR** on the base unit is on.



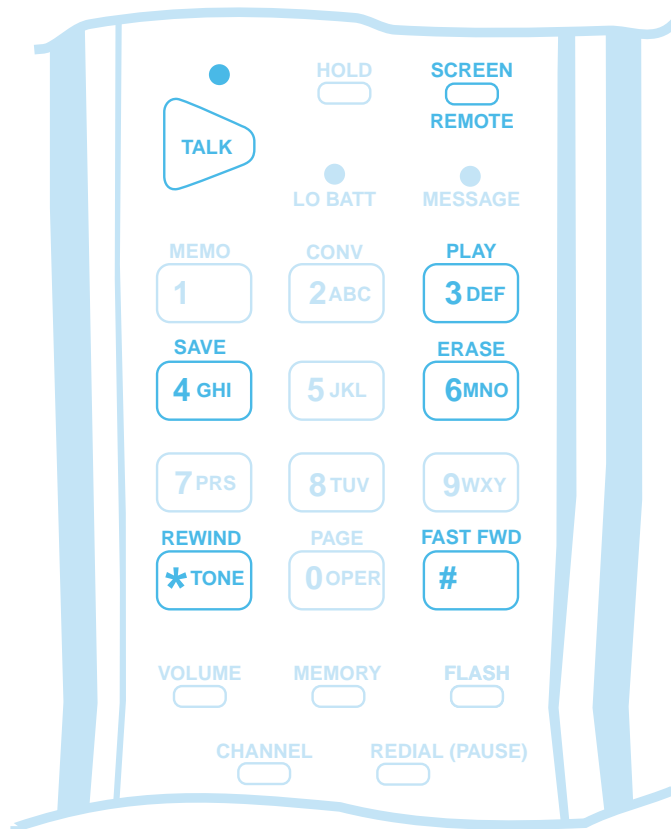
- 2 Press **SCREEN/REMOTE** to listen from the cordless handset. You will hear the TC-520 play your outgoing message and your caller leave a message.



- 3 To speak to the caller, press **TALK**. The unit will stop recording. NOTE: DO NOT press **ON/OFF** on the base unit as you may disconnect your caller.



- 4 To hang up, press **TALK** or return the handset to the base unit. The tape will automatically reset to answer new calls.



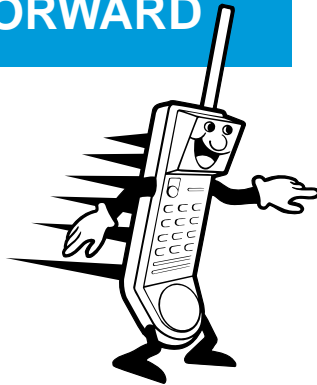
PLAYING MESSAGES &

REWIND

- 1 Press **REWIND** (* key) during playback. Each time **REWIND** (* key) is pressed, the tape will rewind for several seconds.



FAST FORWARD



- 1 Press **FAST FWD** (# key) to move quickly through messages. Each time **FAST FWD** (# key) is pressed, the tape will fast forward for several seconds.



REPLAY ALL MESSAGES

- 1 Press **PLAY** (3 on the keypad) after the last message is played.



SAVE MESSAGES

Messages will be saved within 7 seconds after you hear the last message. The TC-520 will automatically reset to answer new calls, after saving messages.

- 1 Press **SAVE** (4 on the keypad.)



I will save messages.

ERASE

Messages may be erased within 7 seconds after hearing the last message.

- 1 Press **ERASE** (6 on the keypad.)

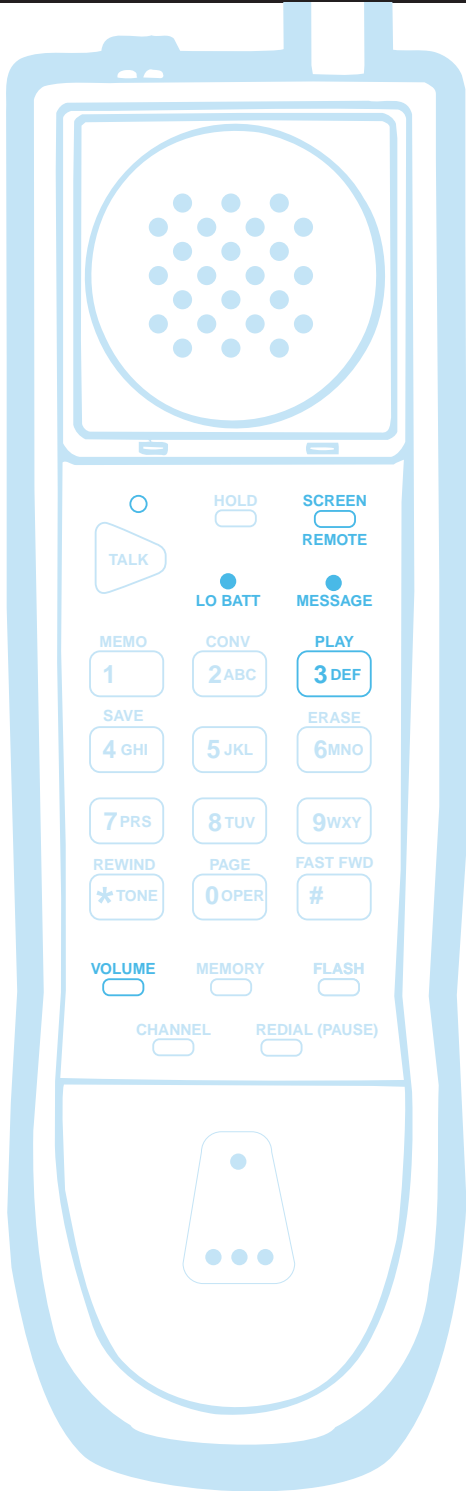


I will erase messages.

AUTOMATIC ERASE (Tape Reset)

The TC-520 is designed to automatically record new messages over old ones. To automatically erase messages, **DO NOT** press **SAVE** (key 4) during message playback or within 7 seconds after the last message is heard.

YING MESSAGES



HANDSET VOLUME CONTROL

Press **VOLUME** to change the volume level of the handset. Press **VOLUME** up to four times to increase the sound level. Press **VOLUME** a fifth time and the sound level returns to normal.



RETRIEVE MESSAGES FROM HANDSET

You can play messages through the handset. Make sure the handset is in the Standby mode and the base unit is "on."

- 1 Press **SCREEN/REMOTE**. You will hear a confirmation tone.



- 2 Press **PLAY (3)** on the keypad to play your messages. You will hear:

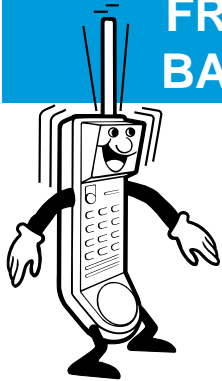


Hello, you have two messages.

- 3 The tape will rewind and play your messages along with the time/day stamp.
NOTE: If you hang up during handset message retrieval, all messages will be saved.

PAGING, BATTERY & PLA

PAGING THE HANDSET FROM THE BASE UNIT



To page the handset from the base unit, the handset must be in the "Standby" mode (the **TALK INDICATOR** is not lit.)

- 1 Press **PAGE** on the base unit. You will hear the handset ring, if the ringer switch is set to **ON**.



- 2 To cancel the page press **PAGE**.

CHARGING THE BATTERIES

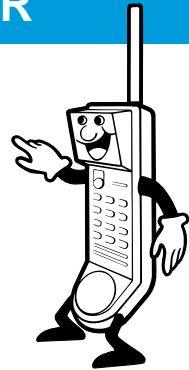
Charge the batteries for 12-15 hours before using the cordless handset for the first time. The handset is always charging while it is in the base unit and cannot be overcharged.

- 1 Check the AC Adapter to see that it is connected correctly.

- 2 Place the handset in the base unit. The **CHARGING/LINE IN-USE INDICATOR** on the base unit lights to indicate the TC-520 is charging.



LOW BATTERY INDICATOR



When the battery pack needs recharging, the **LO BATT INDICATOR** (Low Battery) on the handset will flash. You may also notice a reduction in the quality of your cordless handset communications. Return the cordless handset to the base unit when the **LO BATT INDICATOR** is flashing.

NOTE: The batteries can be recharged many times, but if you get a low battery indication even after 12-15 hours of charging, you should replace the battery pack.

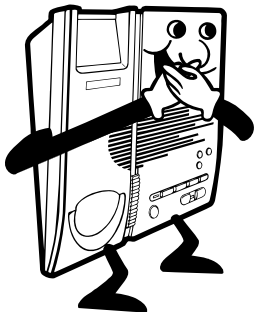
BATTERIES - The TC-520 is shipped with the handset battery pack installed. If it becomes necessary to remove or replace the batteries see page 32.

HANDSET MESSAGE WAITING INDICATOR

In the "Standby Mode," if you have messages, the **MESSAGE INDICATOR** flashes for 7 seconds after the handset is used. (In the "Standby Mode" the **TALK INDICATOR** is not lit.)



ANSWERING A CALL DURING MESSAGE PLAYBACK



If you receive an incoming call during message playback:

- 1 Pickup the handset and press **TALK** or press **SPEAKERPHONE** on the base unit. The tape stops playing messages.



- 2 After completing your call, press **PLAY/PAUSE** to listen to messages.



MEMO RECORD

You can record a memo for another household member or a reminder for yourself. A memo can be recorded up to 5 minutes in length and played at the machine or in remote operation. It will be stamped with the time and day it was recorded.

- 1 Press **MEMO**.

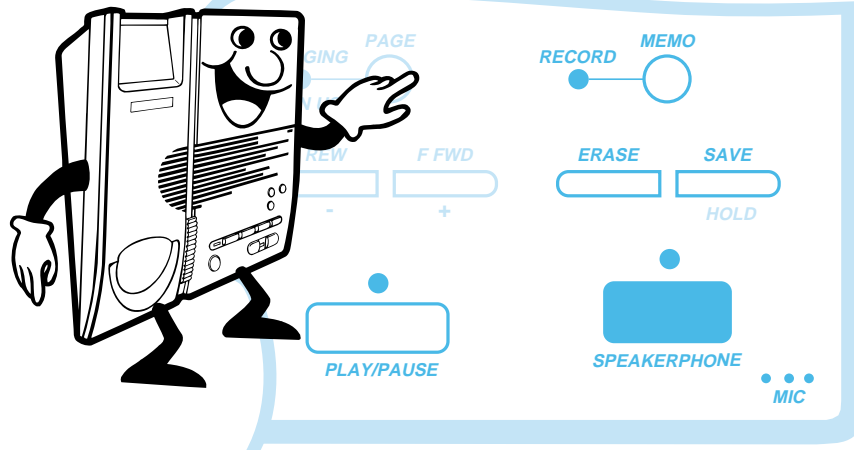


Record message after the tone.

- 2 Begin speaking about 6-8" from the microphone.

- 3 Press **MEMO** again after you finish speaking.

- 4 Press **PLAY/PAUSE** to listen to the memo.



PLAYING MESSAGES

PAUSE MESSAGE PLAYBACK

You can temporarily pause message playback up to 5 minutes. The TC-520 will not answer calls or record phone messages in the "pause" mode.

- 1 Press **PLAY/PAUSE** during message playback. The **MESSAGE INDICATOR** will flash slowly.



- 2 Press **PLAY/PAUSE** again to resume listening to messages. NOTE: If you leave the TC-520 in "pause" mode, it will automatically reset to answer calls after 5 minutes and all messages will be saved.

AUTOMATIC ERASE (Tape Reset)

If you do not save or erase messages, the TC-520 will automatically reset to record new messages over the old messages. To ensure message erasure, press **ERASE** within 7 seconds after the last message is heard.

SAVE MESSAGES

You can save all messages during message playback or up to 7 seconds after the last message has played.

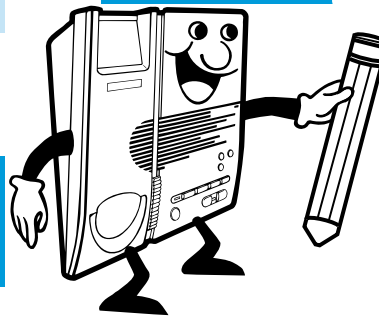
- 1 Press **SAVE**. You will hear:



I will save messages.

- 2 All messages will be saved after the last message has played. Note: All messages will be played, even if you press **SAVE** before hearing the last message.

ERASE MESSAGES



You can **ERASE** all messages during message playback or up to 7 seconds after the last message has played.

- 1 Press **ERASE**. You will hear a beep. All messages will be erased after the last message has been played. You will hear:



I will erase messages.

NOTE: All messages will be played, even if you press **ERASE** before hearing the last message. NOTE: If you change your mind, you can press **SAVE** within 7 seconds after hearing, "I will erase messages," to save all messages.

YING MESSAGES

PLAY MESSAGES

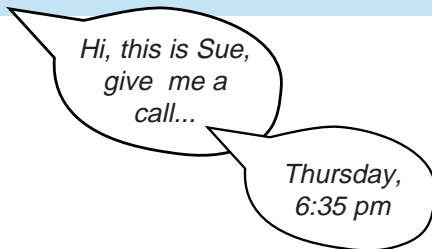
When messages have been recorded the **MESSAGE INDICATOR** flashes. A synthesized voice will announce the time and day each message was received if the time/day stamp has been set.

1 Adjust the **VOLUME CONTROL** (located on the right side.)

2 Press **PLAY/PAUSE**.



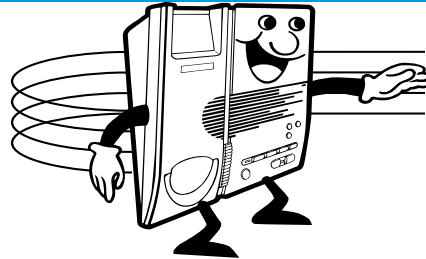
3 The tape will reset to the beginning of your first message and then play your messages. A synthesized voice will announce the time and day each message was received if the time/day stamp has been set.



4 After the last message is played, the tape will automatically reset unless you press **SAVE** or **ERASE**. New messages will be recorded over the old messages.



REWIND (REW)



1 Press and hold **REW**. The tape will rewind as long as the button is pressed.



FAST FORWARD (F FWD)

1 Press and hold **F FWD**. The tape will fast forward as long as the button is pressed.



REPLAY MESSAGES

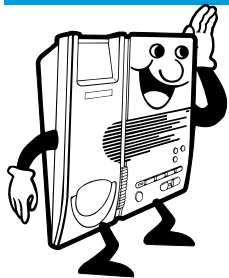
After the tape resets, messages that have not been erased can be replayed as long as no new messages have been received.

1 Press **PLAY/PAUSE**.



CALL SCREENING & PLA

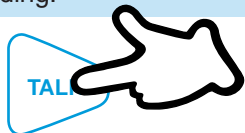
CALL SCREENING



When your phone rings, the TC-520 will answer the call (be sure the base unit is on.) You can hear your outgoing message and your caller's message through the speaker in the base unit.

1 Adjust the **VOLUME CONTROL** (located on the right side.)

2 Pick up the cordless handset and press **TALK** or press **SPEAKERPHONE** on the base if you want to speak to your caller. The machine will automatically stop recording.

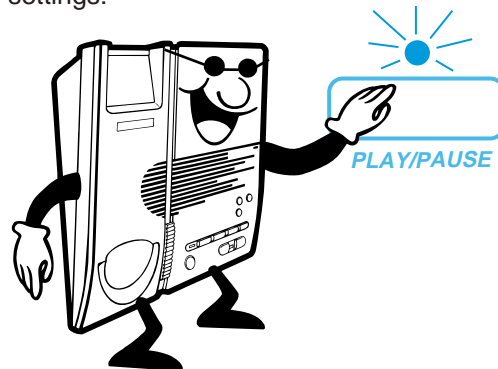


3 To hang up, press **TALK** or return the handset to the base unit. The tape will automatically reset to record new calls.

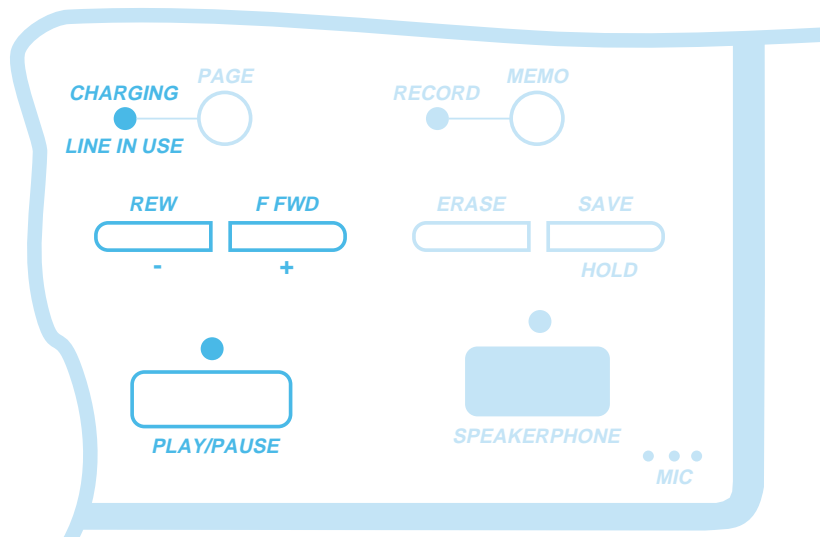
4 To screen calls from the cordless handset, see page 17.

MESSAGE INDICATOR

The **MESSAGE INDICATOR** has four settings:



1. **ON** = the answering machine is on.
2. **OFF** = the answering machine is off.
3. **NEW MESSAGE INDICATOR** = the light flashes rapidly when new messages have been recorded and not played.
4. **SAVED MESSAGE INDICATOR** = the light flashes slowly when messages have been played and saved or when pausing message playback.



SWITCH SETTINGS

Set these switches before using the TC-520.

TONE/PULSE

This switch (located on the back of the base unit) tells the TC-520 to dial out with either touchtone or pulse signals to match the service you have with your local telephone company. The TC-520 is shipped with the **TONE/PULSE SWITCH** in the Pulse position. If you have touchtone service, set this switch to tone.

PULSE = for Rotary dialing or Pulse systems
TONE = for Touchtone systems

POWER SAVER/ RINGER ON-OFF

The TC-520 is shipped with the **HANDSET RINGER SWITCH** (located on the side of the handset) set to "off". When the ringer is "off", the **POWER SAVER** is "on" and battery power is conserved. Turn the handset ringer on before use.

RINGER ON - When the ringer is ON, the handset will ring when an incoming call or paging signal is received. The rechargeable batteries will last up to seven days in this mode (the Power Saver Switch is OFF.)

POWER SAVER (PWR SAVER) ON - When an incoming call is received the handset will not ring, but all other handset functions will operate. The rechargeable batteries will last up to 2 months in this mode (the ringer is OFF.)

BASE RINGER ON-OFF

The TC-520 is shipped with the base unit ringer "ON". To turn the ringer ON or OFF:

- 1 Press and hold **TIME** until you hear a beep.



- 2 Press **ON/OFF** (under the cassette lid). A "beep" indicates the base unit ringer is OFF. A "ring" indicates the ringer is ON.

- 3 Press **TIME** when finished.

PROGRAMMABLE RING SELECT

The TC-520 is preset to answer on the 4th ring. The unit may be programmed to answer on the second or fourth ring, or to answer using the Tollsaver (2-4) setting. When calling to check for messages, tollsaver will help eliminate toll charges by letting you know if there are any new messages before the TC-520 answers. If there are no new messages, you can hang up before the fourth ring to avoid unnecessary toll charges.

- 1 Press and hold **TIME** (about 2 seconds) until you hear a beep.



- 2 Press **F FWD** within 10 seconds of pressing **TIME**. Each time you press **F FWD** a synthesized voice will announce the new setting.

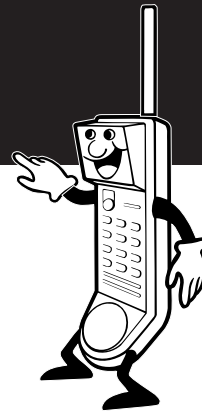


When you hear:

- 2 = The TC-520 will answer on the **second** ring.
- 2-4 (Tollsaver) = The TC-520 will answer calls in the tollsaver mode:
 - Second** ring = **new** messages
 - Fourth** ring = **no** new messages
- 4 = The TC-520 will answer on the **fourth** ring.

- 3 Press **TIME** after the desired setting is announced. You will hear two beeps. The TC-520 will now answer calls using the programmed setting.

OPERATING INFORMATION



MOVING THE TC-520

To relocate the TC-520, unplug the AC ADAPTER from the wall outlet for no more than 3 minutes. CAUTION: If the AC ADAPTER PLUG is disconnected from the back of the TC-520, all memory (time/day setting, autodial numbers, last number redial) will be erased.

SINGLE TAPE SYSTEM

The TC-520 is a single cassette answering machine. Your outgoing and incoming messages are stored on one microcassette. With this design, it is normal operation for the tape to reset before callers can leave a message. If you have several long messages on the tape, it could take a few seconds for the tape to reposition itself and for the TC-520 to record new messages. The caller will hear a continuous tone while the tape resets.

AUTO EXTENSION DISCONNECT

You can answer a call from any extension phone connected to the same line as the TC-520. Pick up any extension phone after the TC-520 has answered the call. The unit will automatically stop playing your outgoing message or recording a message. If it does not stop, quickly tap the hook-switch on the extension phone without disconnecting the caller.

CHANGING CHANNELS

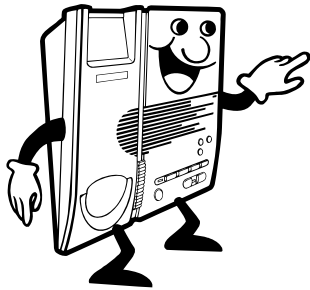
After TALK is pressed, the TC-520 selects the best available channel. If you hear noise or interference while using the TC-520, press CHANNEL on the handset to change channels.

CHARGING/LINE IN-USE INDICATOR

The CHARGING/LINE IN-USE INDICATOR lights when someone is using an extension phone or the cordless handset. The indicator reduces unwanted interruptions.

TIME & DAY STAMP

SET TIME & DAY



Set the current time and day. The TC-520 will "stamp" each message with the time and day.

- 1 Press **TIME SET** (under the lid.) You will hear:

TIME SET



Sunday

- 2 Press and hold **F FWD** to move the day forward or **REW** to reverse the day.



Monday

- 3 Press **TIME SET** again.

12:00 AM

- 4 Press **F FWD** to advance the hour or **REW** to reverse the hour.

1:00 PM

- 5 Press **TIME SET** again to set the minutes. The minutes will be announced.

00

- 6 Press **F FWD** to advance the minutes or **REW** to reverse the minutes. Press and hold the appropriate button to advance or reverse the minutes in 10 minute blocks.

01

10

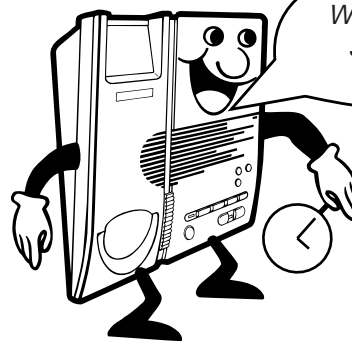
- 7 Press **TIME SET** to end. The day and time will be announced.

Monday,
10:34 PM

TALKING CLOCK

A synthesized voice will announce the time and day.

- 1 Press **TIME** to hear the current time and day. NOTE: If you hear three beeps, reset the time.



Wednesday,
3:35 PM

RECORD/CHECK THE OUTGOING MESSAGE

RECORD AN OUTGOING MESSAGE

You can record an outgoing message up to 60 seconds in length. The outgoing message is recorded on the microcassette.

1 Be sure the **MESSAGE INDICATOR** is lit.



PLAY/PAUSE

2 Set the **VOLUME CONTROL** at the midpoint (located on right side of TC-520.) NOTE: The sound level is automatically adjusted when the outgoing message is played over the phone line.

3 Press and hold **OUTGOING MESSAGE RECORD** (under the cassette lid.)

OUTGOING
MESSAGE
RECORD



4 When the **RECORD INDICATOR** lights and you hear:



Record new greeting after the tone.

5 Begin speaking about 6 - 8" from the microphone.

6 Press **OUTGOING MESSAGE RECORD** again after you have finished speaking. The tape will rewind.

7 The outgoing message replays automatically and the TC-520 resets to answer phone calls. You will hear:

Hi, you have reached...

CHECK YOUR OUTGOING MESSAGE

You can listen to your outgoing message anytime.

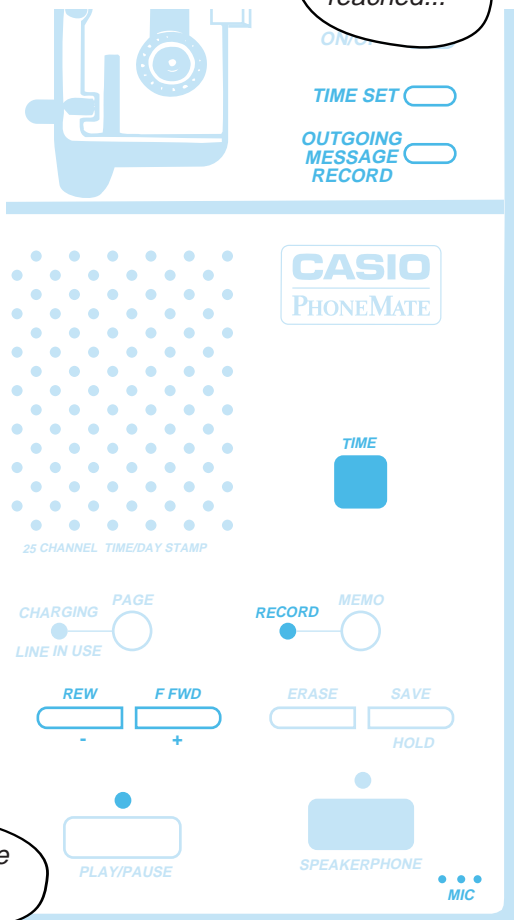
1 Press **OUTGOING MESSAGE RECORD** briefly.

OUTGOING
MESSAGE
RECORD

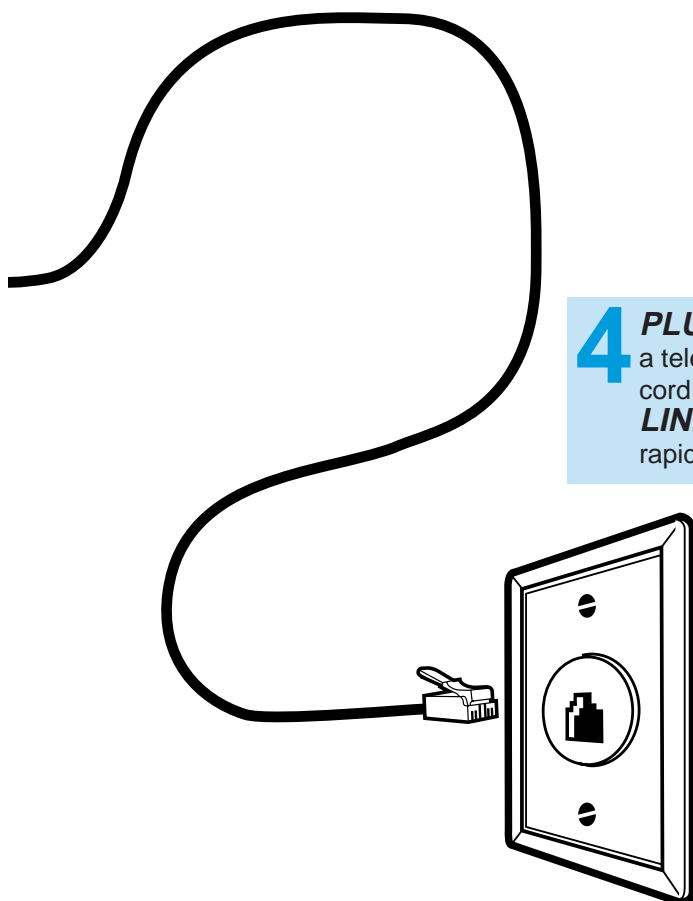


2 The TC-520 will play your outgoing message and reset to answer new calls.

Hi, you have reached...



3 Set the **HANDSET RINGER SWITCH** to "ringer on" before use.



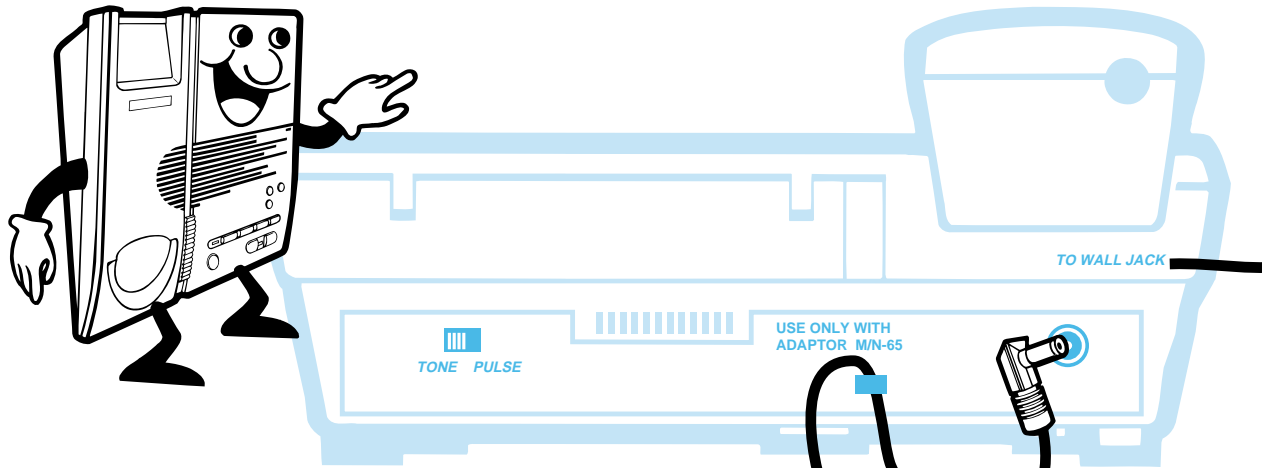
4 **PLUG** the TC-520's telephone cord into a telephone wall jack. If the telephone cord is not connected to the wall jack, the **LINE IN-USE INDICATOR** will flash rapidly.

5 If you have touchtone service, switch the **TONE/PULSE SWITCH** to **TONE**. (See page 9.)

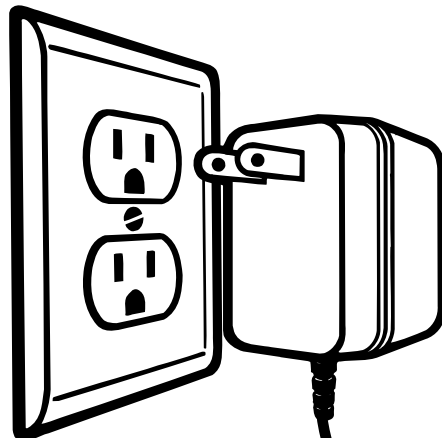
6 Fully extend the base unit antenna for clear reception. Before use, place the handset in the base unit for 12-15 hours to charge the batteries. The TC-520 is ready to record your outgoing message. Turn the page.

INSTALLATION

CONNECT YOUR TC-520



1 **CONNECT** the AC Adapter Plug into the AC Adapter Outlet on the back of the TC-520. **LOOP** the cord through the Cord Holder to prevent accidental disconnection.



2 **PLUG** the AC Adapter into an electrical wall outlet.

IMPORTANT CORDLESS TELEPHONE INFORMATION

GENERAL
PAGE
3

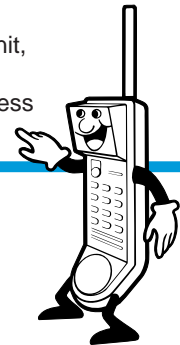
Interference Information

Cordless telephone equipment generates and receives radio waves and, if not installed and used properly, may pick up interference. To prevent interference:

Avoid locations such as heating appliances, electrical equipment (e.g., fluorescent lamp, TV, radio, refrigerator, computer), places subject to direct sunlight, excessive dust, moisture, vibration, etc.

Locate the base unit in a high place in the house (such as the second floor) in order to receive the most effective communication range. Fully extend the base unit antenna.

Notice: This cordless telephone uses radio communications between the handset and the base unit, and may not ensure privacy of communication. Other devices including other cordless telephones may interfere with the operation of this cordless telephone or cause noise during operation. Cordless telephones must not cause interference to any licensed radio service.



WARNING

To prevent fire or shock hazard, do not expose the set to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

CAUTION

1. Use batteries only intended for recharging. Use only the following battery pack:
Nickel-Cadmium Rechargeable, 3.6 volts, 250-300 mAh.
2. Do not dispose of the battery(ies) in a fire. The cell may explode.
Check with local codes for special disposal instructions.
3. Do not open or mutilate the battery(ies.) Released electrolyte is corrosive and may cause damage to the eyes or skin. It may be toxic if swallowed.
4. Exercise care when handling the battery(ies) in order not to short the battery(ies) with conducting materials such as rings, bracelets, and keys.
The battery or conductor may overheat and cause burns.



Ni-Cd

CONTAINS: NICKEL-CADMIUM
RECHARGEABLE BATTERY.
MUST BE RECYCLED OR
DISPOSED OF PROPERLY.

Charge the Handset Batteries Before Using the Cordless Telephone

The batteries lose their charge during shipping and storage. Be sure to charge the batteries before you use the TC-520 cordless telephone. Place the handset in the base unit. The CHARGING/LINE IN-USE INDICATOR will light. Leave the handset in the base unit for 12-15 hours. (See page 14.)

Digital Security Code

The Digital Security Coding System automatically resets a new personal security code to one of over 256 combinations every time you return the TC-520 handset to the base unit. (Whenever the handset is returned to the base unit you will hear a beep.) The security code prevents unauthorized use of your telephone line, false rings and false dialing. (US. Patent No. 5,073,932)

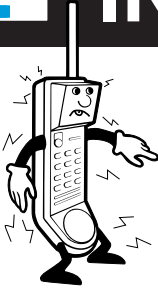
Ultra Clear[®] Noise Reduction Circuit

The TC-520 is equipped with Ultra Clear[®] Noise Reduction Circuitry (Compander Circuit). It reduces background noise—reception is superior to conventional cordless telephones.

25 Channels with Optimum Channel Memory (OCM[™])

The TC-520 has 25 channels with Optimum Channel Memory. Optimum Channel Memory provides fast and clear channel selection. The scanning circuit scans all 25 channels in your neighborhood to find the best available channel. Once it finds the clear channels it selects and remembers the three best ones. When you press "Talk" to call out or receive a call, the unit automatically provides you with the best channel. Whenever you place the handset in the base unit for 2 seconds or more, the unit updates its memory. Press CHANNEL if you wish to change channels manually. (U.S. Patents 5,197,093 & 5,418,839)

IMPORTANT SAFETY INSTRUCTIONS



INSTALLATION INSTRUCTIONS

1. Never install telephone wiring during a lightning storm.
2. Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
3. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
4. Use caution when installing or modifying telephone lines.

When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

1. Read and understand all instructions.
2. Follow all warnings and instructions marked on the product.
3. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
4. Do not use this product near water, for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool.
5. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
6. Slots and openings in the cabinet and the back or bottom are provided for ventilation, to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on the bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register. This product should not be placed in an enclosed environment unless proper ventilation is provided.
7. Do not allow anything to rest on the power cord. Do not locate this product where the cord will be abused by persons walking on it.
8. Do not overload wall outlets and extension cords as this can result in the risk of fire or electric shock.
9. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on the product.
10. To reduce the risk of electric shock, do not disassemble this product, but take it to a qualified serviceman when some service or repair work is required. Opening or removing covers may expose you to dangerous voltages or other risks. Incorrect re-assembly can cause electric shock when the appliance is subsequently used.
11. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - A. When the power supply cord or plug is damaged or frayed.
 - B. If liquid has been spilled into the product.
 - C. If the product has been exposed to rain or water.
 - D. If the product does not operate normally by following the operating instructions. Adjust only those controls, that are covered by the operating instructions because improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
 - E. If the product has been dropped or the cabinet has been damaged.
 - F. If the product exhibits a distinct change in performance.
12. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
13. Do not use the telephone to report a gas leak near the leak.

SAVE THESE INSTRUCTIONS

MESSAGES - from Handset

Retrieve Messages from the Handset	15
Rewind Messages	16
Fast Forward Messages	16
Replay All Messages	16
Save Messages	16
Erase Messages	16
Automatic Erase (Tape Reset)	16
Call Screening	17
Answer a Call During Playback	18
Record a Memo	18
Conversation Record	19

TELEPHONE OPERATION

Alarm	20
Standby Mode	20
To Place a Call	20
If You Dialed a Wrong Number	21
To Receive a Call	21
Hold	21
Redial	22
Flash	22
Pulse/Tone Mixed Dialing	22

AUTODIAL

Autodial Memory Backup	23
Autodial with Voice Check	23
To Check Stored Number	24
Using Autodial	24
Erase Autodial	24
To Program Tone/Pulse in Autodial	24
Programmable Pauses	25

SPEAKERPHONE & PAGING

To Answer an Incoming Call	26
To Switch from Handset to Speakerphone	26
Paging the Base Unit from the Handset	26

REMOTE OPERATION

Retrieve Messages	27
Remote Voice Menu	28
Automatic Erase (Reset)	28
Replay Messages	28
Erase Messages	28
Save Messages	28
Remote Room Monitor	29
Remote Turn On	29
Message Retrieval When Tape is Full	29

ADDITIONAL INFORMATION

Power Failure Recovery	30
Power Failure Recovery from the Base Unit ..	30
Two-Line Installation	30
Multi-Line Installation	30
Cleaning the Base Unit	31
Cleaning the Handset	31
Removing/Replacing Microcassette	32
Battery Installation	32
Limited Warranty	33
Troubleshooting	34
FCC Requirements	36
Accessory Order Form	37